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ABSTRACT

Three tasks are described in the development of a Valuing Lexicon: 1) the identification of a hierarchy of cognitive processes; 2) the identification of the affective components; and, 3) the clarification of the relationships between the two. For the purpose of clarifying the development of the lexicon, Krathwohl's hierarchy on what 'valuing' means and his definitons of terms are accepted. The works of Gagne and Taba serve as the basis for this model. No attempt is made to deal with all levels of the affective taxonomy, nor to refine the positioning of the affective processes in the hierarchy. The goal is to alert the teacher to the place of the affective components in the sequence and to encourage exploration of them. The model can be a useful tool in planning the sequential arrangement of learning activities in the effort to assure cumulative experiences in both cognitive and affective realms. A hypothetical test situation involving the conceptualization of values is described. Testing and refinement of the model is recommended. (SBE)

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# A SYNTHESIS OF COGNITIVE AND AFFECTIVE PROCESSES IN SOCIAL STUDIES INSTRUCTION

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SO 000 189

# A Synthesis of Cognitive and Affective Processes in Social Studies Instruction

The cognitive and affective learning processes have long been separated in the thinking of school personnel. They have been treated as though they were discretely different realms. Perhaps the apparent dichotomy was unintentionally reinforced by the separate publication of the volumes of the Taxonomy of Educational Objectives. Volume I, treating the cognitive domain, came out years before Volume II dealing with affective domain. However, Krathwohl et al pointed up rather clearly the close relationship between the cognitive and affective components of learning (6:45-62).

Another reason for the separation of the cognitive and affective domains may come from the heavy thrust on the exploration of the cognitive processes which we have witnessed in our own country during this decade by Taba, Sigel, Fenton and others along with the renewed interest in Piaget's works.

Perhaps the chief reason for the persistence of this erroneous separation of the cognitive and affective processes comes from the need to undertake three tasks: (1) Identify a hierarchy of cognitive processes, (2) Identify affective components, (3) Clarify the relationships between the two. It is to these three tasks that I will address my concern.

Development of a Valuing Lexicon. As a first step in clarifying the relationships between the cognitive and affective components of the learning process, there needs to be agreement on what valuing means with respect to the social studies. Accepting Krathwohl's hierarchy, what does it mean? In the lexicon which follows, the statements following each terms have been arbitrarily selected from his taxonomy as a means of clarifying the terms in an effort to tentatively develop such a lexicon. No claim is made that the lexicon is all-inclusive, however.

FIG. 1: A TENTATIVE VALUING LEXICON

| | |
|---|---|
| **Characterization** | |
| 5.2 Characterization | Consistent philosophy of life--Devotion to cause. |
| 5.1 Generalized Set | Judges problems in terms of situation rather than dogma. |
| **Organization** | |
| 4.2 Organization of Value System | Weighs alternatives against standards of public welfare.<br>Judges people in terms of their behavior rather than their color or group membership. |
| 4.1 Conceptualization of Value | (Analysis and synthesis in examination of evidence.)<br>Identifying basis of underlying assumptions.<br>Formation of judgments regarding social responsibility. |
| **Valuing** | |
| 3.3 Commitment | Conviction, certainty beyond a shadow of doubt.<br>Faith in one's ideas. Loyalty to.... |
| 3.2 Preference for a Value | Willingness to publicly express a preference of approval or disapproval. Opinion with conviction. |
| 3.1 Acceptance | Tentative. Willingness to reconsider own position.<br>Willingness to talk about it. |
| **Responding** | |
| 2.3 Satisfaction in Responding | Responds with pleasure, zest, enthusiasm. (Oh boy!) |
| 2.2 Willingness to Respond | Voluntarily seeks...<br>Responds with consistent interest. Does "on his own." |
| 2.1 Acquiescence in Responding | Compliance without commitment to...<br>Does if told to do it. |
| **Attending** | |
| 1.3 Controlled or Selected Attention | Alertness toward (human values). |
| 1.2 Willingness to Receive | Accepts differences. Tolerance of (cultural differences).<br>Disposition toward considering... |
| 1.1 Awareness | Observes with increasing differentiation...<br>Recognition of more than one viewpoint<br>Sensitivity to urgency of...<br>Awareness of existence of (feelings of others) |

After Krathwohl (6)

Development of a Cognitive Lexicon.

The identification of a lexicon for the cognitive process, tentative though it must be, is also a necessary step in establishing the relationships for comparative purposes. Although the attempt to meld these systems of people who have different psychological orientations is open to objection, the works of Gagne (3) and Taba (7, 8, 9, 10) serve as the basis for this lexicon. The product is open to further criticism because the writer has undertaken the responsibility for extrapolating beyond the published works of Taba in a direction he feels is consistent with her thinking. (For these reasons the user is forewarned of these limitations in using the material.) The hierarchy of categories for cognitive processes, which results from this synthesis, are as follows:

(See next page)

FIG. 2: A TENTATIVE COGNITIVE LEXICON

| | GAGNE | TABA |
|---|---|---|
| DECISION MAKING | Choosing and describing desirable courses of action designed to solve a social problem. | |
| TESTING A HYPOTHESIS | Demonstrating application of hypothesis in more than one specific situation. | Repeated testing and refinement of strategic model.* (H) |
| FORMULATING A HYPOTHESIS | Stating a hypothesis based on a formulated (categorical*) model | |
| FORMULATION OF A MODEL | | Development of a strategic model* based on repeated APPLICATION OF PRINCIPLES to a variety of settings. (H) |
| VERIFICATION | | Is there sufficient data to support the position? Are the necessary conditions available? (Is it feasible?) Cognitive Task III. |
| DEMONSTRATION OF PREDICTION | Application of Generalization | Application of Principles (strategic model*) C.T. III |
| PREDICTING | Making predictions (implied) | Divergent predictions from "If - Then" base (H) |
| MAKING INFERENCES, GENERALIZATIONS | | 4. Developing higher order generalizations as a result of comparing/contrasting<br>3. Comparing/contrasting. samples I, II, C.T.II |
| COMPARING AND CONTRASTING | Describing likenesses and differences. | 2. Making inferences and generalizations re Sample I, re Sample II.<br>1. Data gathering for S. I, Sample II. C.T. II. |
| OPERATIONALLY DEFINING | Stating the definition. | Stating the relationships between items grouped together. C.T. I |
| CLASSIFYING | Identifying categories | Grouping and Labelling C.T. I |
| OBSERVING | Identifying properties | Listing C.T. I |

--*Parsons and Shaftel (2). Explanation of terms "categorical model" and "strategic model".
--(H) indicates where the writer has made clarification or extrapolation not in the original sources.

A Synthesis of Cognitive and Affective Processes.

In examining the relationships between the cognitive and affective processes, one can start with the valuing lexicon in order to identify items which can be readily observed as overt pupil behaviors. Examples would include:

Attending: 1.3 Controlled or selected attention. Alertness toward (human values).

Responding: 2.1 Acquiescence in responding. Compliance without commitment to...Does if told to.

Valuing: 3.2 Preference for a Value. Willingness to express a preference of approval or disapproval.

Organization: 4.2 Organization of a value system. Weighs alternatives against standards of public welfare. Judges people in terms of this behavior rather than their color or group membership.

Given our lexicon for cognitive processes, also a hierarchical arrangement (see Fig 2, which must be read from the bottom upward), the above items seem to fit into the schema as shown in Figure 3.

(FIG. 3 - Continued)

| | | | |
|---|---|---|---|
| DEMONSTRATION OF PREDICTION | Application of Generalization | Application of Principles (Strategic Model*) C.T.III. | |
| PREDICTING | Making predictions (implied) | Divergent Predictions from "If - Then" base (H) | |
| VALUING (implicit) | | | Identification of alternatives and underlying assumptions. Indication of preference (II) |
| RESPONDING: CONCEPTUALIZATION OF VALUES, LEVEL I. | | | 2.Ordering values (estab. priority)<br>1.Identification of values underlying alternative positions samples |
| MAKING INFERENCES GENERALIZATIONS | | 4.Developing higher order gen's as a result of comp'g/contr'g<br>3.Compar'g/contr'g S.I, S.II (C.T.II) | |
| COMPARING & CONTR'G | Describing likenesses & differences. | 2.Making inferences (going beyond data) & gem's re Sample I, Sample II.<br>1.Data gathering Sample I, Sample II. (C.T II) | |
| ATTENDING | | | Alertness toward human values and labelling. |
| OPERATIONALLY DEFINING | Stating the definition | Stating the relationships between items grouped together. (C.T. I) | |
| CLASSIFYING | Identifying categories | Grouping and Labelling (C.T.I) | |
| OBSERVING | Identifying properties | Listing (C.T.I) | |

*Explanation of terms will be found in Parsons and Shaftel (2:141ff). No.'s in parentheses refer to bibliography
(H) ndicates where the writer has made clarification or extrapolation not in the original source

FIG. 3. COGNITIVE AND AFFECTIVE PROCESSES IN THE SOCIAL STUDIES

| PROCESSES | Cognitive | | AFFECTIVE |
|---|---|---|---|
| | GAGNE (analytic mode (3) | TABA (integrative mode (7, 8, 9, 10) | HILLS (after Krathwohl et al.) |
| POLICY MAKING | | | Recommending policies based on weighing alternatives against standard of public welfare. Judging problem solutions in terms of value hierarchy of culture studied. (Org. of V. System) Testing consequences of alternatives (11) |
| DECISION MAKING | Choosing and describing desirable courses of action designed to solve a social problem. | | |
| TESTING A HYPOTHESIS | Demonstrating application of hypothesis in more than one specific situation. | Repeated testing and refinement of strategic model.* (H) | |
| FORMULATION OF A MODEL | | Development of a strategic model* based on repeated APPLICATION OF PRINCIPLES to a variety of settings. (4) | |
| CONCEPTUALIZATION OF VALUES, level II | | | Evaluates in terms of operant values, power structures, and other social forces evident. Is the position feasible? (C.T. IV (5) |
| VERIFICATION | | Is there sufficient data to support the position? Are the necessary conditions available? | |

A Brief Test of Fit

Let us briefly test the fit of the arrangement.

A. ATTENDING.

If first grade students were asked the open ended question: "What do people do at your house?" the responses could be listed. Grouping would put similar items together. Some groups might be labelled work, others fun(or play). The items under each label would reflect the child's feelings about them and thus values placed on each. Some child might give reasons for putting the same item in both categories, revealing his"alertness to human values" in grouping. Hence, the placement of the attending component of the Valuing schema in the fourth row of our chart, following Operationally Defining.

Similarly, if fifth grade students were asked "What can you tell us about people who came to the New World (or the United States)? ", pupils could, conceivably, argue whether the label for a group of items should be "Hardships" or "Adventures". Should the teacher ask the reasoning behind the label chosen, the degree of "alertness to human values" would be further clarified.

B. RESPONDING.

Given the persistent interest of pupils in the relationships between early settlers and Indians, it is conceivable that a class might have examined the ways the Indians used the land, on the one hand, and the way the settlers used the same land when they arrived on the scene. Thus the basis is set for examining the reasons for the conflicts which arose, using a procedure described in detail elsewhere (1,4). In the process, the teacher could ask the pupils to list the reasons why the Indians felt the way they did. She could then ask them to number the reasons in the order of probable importance to the Indians. The then feelings of the settlers would be treated in the same fashion. To this point students are assumed to have been Acquiescent in Responding -"without commitment to" the values identified.

But they have done more - they have identified values and ordered them. They have conceptualized values; not in the terms of our lexicon, however. To keep clear the distinction from level 4.1 of Figure 3, this activity might well be labelled Conceptualization of Values, Level I to indicate it is a special kind of responding and at a different level from the conceptualization of values of the Taxonomy. (The latter will be called Conceptualization of Values, Level II in this paper.)

C. VALUING.

In our illustration employing the Indian as one sample and the early settlers as another, the level of affective involvement can be raised to the level of expressing a preference, if the teacher chooses to do so. This can be done, briefly, by asking a student to take sides -- which group would be support? Or the teacher could ask the students to identify alternatives and explore consequences following the steps described elsewhere (1,4)

D. ORGANIZATION. -

Conceptualization of Values. Following the study of the way of life of people in the desert, the pupils could be asked: "What will happen to way of life in the desert if sufficient water is available?" (8:57, 9:65). This would enable the teacher to see how well the pupils could apply their learnings. Those of you familiar with Taba's cognitive maps (8:57, 9:65) may recall that among the predictions third graders made was a chain as follows: water trees houses cities. One may choose to accept this chain of predictions as possible. If so, how likely is it? The question of feasibility ought to be raised. This is a question getting at operant values. What might be other uses for the irrigated soil? Which would be of greater value to-people than lumber? If trees were grown, for what purpose other than lumber might it be? Why? At this level we have raised the question of feasibility, of social values. We have reached the Taxonomy level of 4.1 Conceptualization of Values by juxtaposing the question of feasibility with that of possibility.

E. ORGANIZATION. -

Organization of a Value System. Given a variety of learning experiences which produce high level generalizations about a country and its people, the students may be asked to make decisions about social problems. "Given the problem of an inadequately fed population in India, what should be done about it?" Answers proposed might include slaughtering the cows roaming the streets, shipping more surplus foods, re-distributing available farm land to give small plots of land to more farmers, and sending farm machinery. One might even make a case for doing them all. Decision making often stops at the point of what is possible.

The problem enters the affective domain when students are asked whether the decision options are acceptable in the cultural context for which they are proposed. They must judge the solution in terms of the value hierarchy of the culture studied. Slaughtering the cows would be unacceptable because of religious values. Food customs and lack of refrigeration create problems with some surplus foods; sending acceptable food (as a single solution) meets the problem of hunger but also tends to foster dependence. Small farm plots prevent the increased yields available from mechanization and large scale operations (economy of scale). Farm machinery requires trained operators even if it is only a power hoe.

Hence, to test the decisions contemplated in order to make policy recommendations, students need to weigh the alternatives against the values of the people - if real change is to be effected. "How will they feel? Why?"

COMMENTS.

The synthesis attempted, while only tentative, seems highly useful. It makes no attempt to deal with all levels of the affective Taxonomy. Nor is there an assumption that the positioning of affective processes in the hierarchy is final.

It seems clear that certain affective processes depend on an adequately developed cognitive base. It also is apparent to the writer that the affective components are not apt to be explored unless the teacher is alerted to their place in the sequence and chooses to pursue them. The cognitive processes can be pursued independently of the affective processes described; the reverse may be nearly impossible in this schema.

One further observation may be in order. As the affective column is read, from the bottom up, the development seems to move from an egocentric focus (attending) to an ethnocentric focus (Responding - Conceptualization of Values, Level I) to an ethnological focus (Policymaking). Such a development seems crucial, rather than fortuitous. It argues the value of repeated engagements at successive levels in the affective component of the learning process.

The final figure (Fig. 3. Cognitive and Affective Processes in Social Studies) is a useful tool in planning the sequential arrangement of learning activities in the effort to assure cumulative experiences in both cognitive and affective realms. The model needs testing and will stand revision in the light of experience. The reader has been alerted to limitations which may exist in the lexicon tentatively proposed herein.

N.B. The following chart is appended for the benefit of readers unfamiliar with Taba's Cognitive Tasks. Under each task the chart is read upward from 1 to 3.

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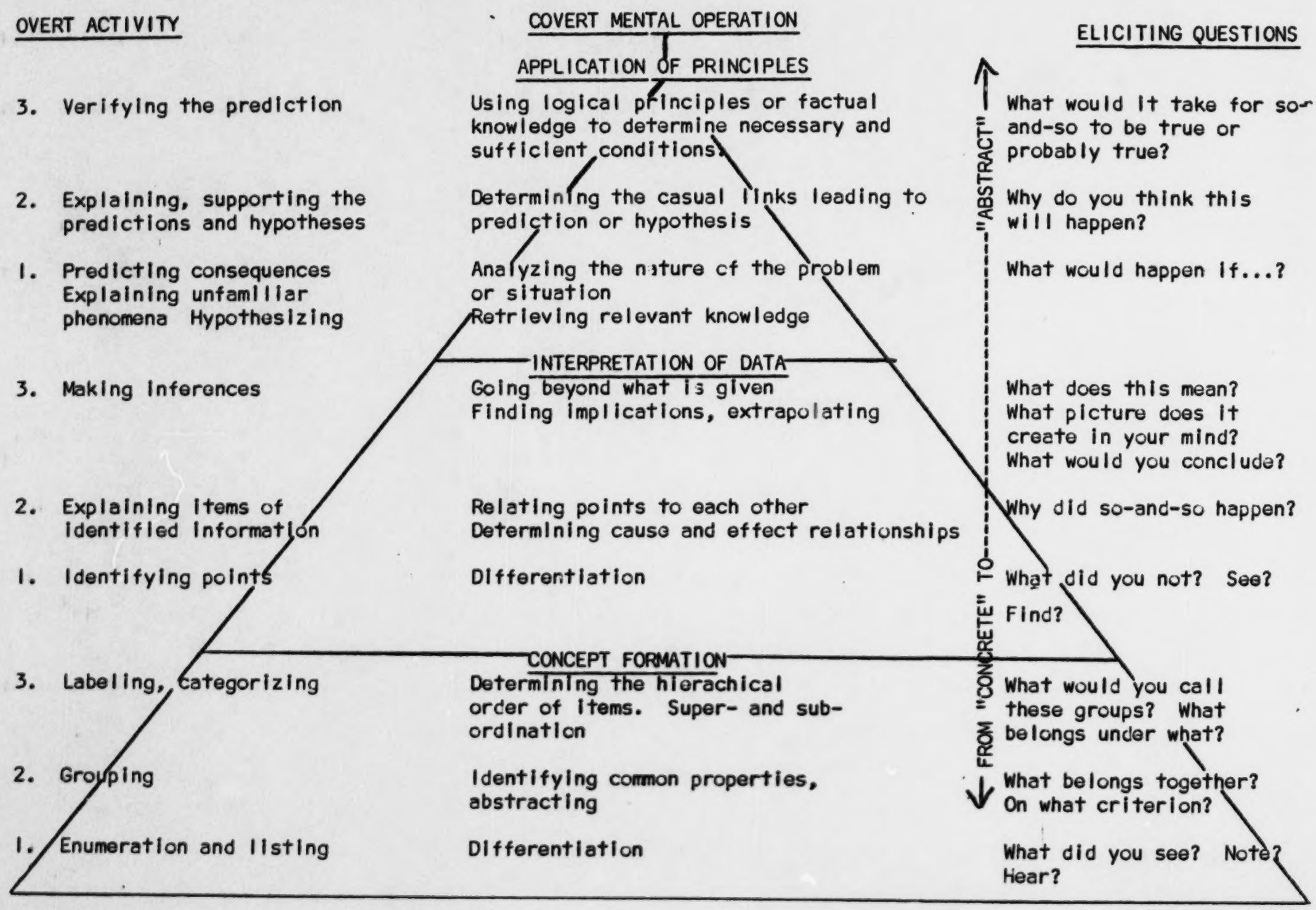
SCHEMA FOR ANALYSIS OF THREE COGNITIVE TASKS


OVERT ACTIVITY
COVERT MENTAL OPERATION
ELICITING QUESTIONS
APPLICATION OF PRINCIPLES
3. Verifying the prediction
Using logical principles or factual knowledge to determine necessary and sufficient conditions
What would it take for so-and-so to be true or probably true?
2. Explaining, supporting the predictions and hypotheses
Determining the casual links leading to prediction or hypothesis
Why do you think this will happen?
1. Predicting consequences Explaining unfamiliar phenomena Hypothesizing
Analyzing the nature of the problem or situation
Retrieving relevant knowledge
What would happen if...?
INTERPRETATION OF DATA
3. Making inferences
Going beyond what is given
Finding implications, extrapolating
What does this mean?
What picture does it create in your mind?
What would you conclude?
2. Explaining items of identified information
Relating points to each other
Determining cause and effect relationships
Why did so-and-so happen?
1. Identifying points
Differentiation
What did you not? See?
Find?
CONCEPT FORMATION
3. Labeling, categorizing
Determining the hierachical order of items. Super- and sub-ordination
What would you call these groups? What belongs under what?
2. Grouping
Identifying common properties, abstracting
What belongs together? On what criterion?
1. Enumeration and listing
Differentiation
What did you see? Note? Hear?
"ABSTRACT"
FROM "CONCRETE" TO

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